

Claims

What is claimed is:

- [c1] A fastener for coupling blowout preventers in a stack, comprising:
an elongated shaft having a first end and a second end; and
a head disposed proximate the first end of the elongated shaft and adapted to be retained in a recess in a connecting face of a first blowout preventer, wherein the second end of the elongated shaft is adapted to be coupled to a second blowout preventer.
- [c2] The fastener of claim 1, wherein the head is integral to the fastener.
- [c3] The fastener of claim 1, wherein the head comprises a head ring disposed in a groove proximate the first end of the elongated shaft.
- [c4] The fastener of claim 1, wherein the head is coupled to the first end of the elongated shaft.
- [c5] The fastener of claim 1, wherein the head comprises a nut in threaded engagement with the elongated shaft.
- [c6] The fastener of claim 1, further comprising a threaded section proximate the second end of the elongated shaft, wherein the threaded section is adapted to be in threaded engagement with the second blowout preventer.
- [c7] The fastener of claim 1, further comprising a second head disposed proximate the second end of the elongated shaft, wherein the second head is adapted to be coupled to the second blowout preventer by having the second head retained in a recess in the second blowout preventer.

- [c8] The fastener of claim 1, further comprising a grip section disposed between the first end and the second end of the elongated shaft.
- [c9] The fastener of claim 8, wherein the grip-section is hexagonally shaped.
- [c10] A coupled blowout preventer stack, comprising:
a first blowout preventer having a plurality of recesses disposed in a connecting face of the first blowout preventer;
a second blowout preventer in a vertical arrangement with the first blowout preventer; and
a plurality of fasteners each having an elongated shaft with a first end and a second end, the plurality of fasteners each comprising a head proximate the first end of the elongated shaft, wherein the heads are disposed in the plurality of recesses in the first blowout preventer and wherein the second ends of the plurality of fasteners are coupled to the second blowout preventer.
- [c11] The coupled blowout preventer stack of claim 10, wherein the plurality of fasteners each further comprise a threaded section proximate the second end of the elongated shaft that is in threaded engagement with the second blowout preventer.
- [c12] The coupled blowout preventer stack of claim 10, wherein the plurality of fasteners each further comprise a grip section disposed between the first end and the second end of the elongated shaft.
- [c13] The coupled blowout preventer stack of claim 12, wherein the grip sections are hexagonally shaped.
- [c14] The coupled blowout preventer stack of claim 10, wherein the heads of the plurality of fasteners are retained in recesses by retaining collars.

- [c15] The coupled blowout preventer stack of claim 14, wherein the retaining collars are in threaded engagement with the first blowout preventer.
- [c16] The coupled blowout preventer stack of claim 14, wherein the retaining collars each comprise a retaining ring disposed in a groove in the one of the plurality of recesses in the first blowout preventer.
- [c17] The coupled blowout preventer stack of claim 10, wherein the first blowout preventer comprises a plurality slots extending from the recesses in the first blowout preventer to the outside of the first blowout preventer.
- [c18] The coupled blowout preventer stack of claim 17, wherein the second blowout preventer comprises a plurality slots extending from recesses in the second blowout preventer to the outside of the second blowout preventer.
- [c19] The coupled blowout preventer stack of claim 10, wherein the heads of the plurality of fasteners are integral with the elongated shafts of the plurality of fasteners.
- [c20] A method for coupling two blowout preventers in a blowout preventer stack, comprising:
coupling a first end of each of a plurality fasteners to a first blowout preventer;
positioning a second blowout preventer in a vertical arrangement with the first blowout preventer so that a head on a second end of the each of the plurality of fasteners is received in one of a plurality of recesses in the second blowout preventer;
coupling a plurality of retaining collars to the second blowout preventer so that the heads of the plurality of fasteners are retained in the plurality of recesses in the second blowout preventer; and
tightening the connection.

- [c21] The method of claim 19, wherein tightening the connection comprises rotating the plurality of fasteners.
- [c22] The method of claim 19, wherein tightening the connection comprises rotating the plurality of retaining collars.
- [c23] A fastener for coupling blowout preventers in a stack, comprising:
 - a first member having a first head adapted to be retained in a recess in a first blowout preventer; and
 - a second member adapted to be coupled to a second blowout preventer,wherein the first member and the second member are configured to be coupled to each other.
- [c24] The fastener of claim 23, wherein the second member comprises a second head adapted to be retained in a recess in the second blowout preventer.
- [c25] The fastener of claim 23, wherein the second member is adapted to be in threaded engagement with the second blowout preventer.
- [c26] The fastener of claim 23, wherein the first member further comprises a female threaded section, and the second member further comprises a male threaded section.
- [c27] The fastener of claim 23, further comprising a grip section disposed on at least one selected from the group consisting of the first member and the second member.
- [c28] The fastener of claim 27, wherein the grip section is hexagonally shaped.
- [c29] The fastener of claim 23, wherein the second member comprises a second head adapted to be retained in a recess in the second blowout preventer, wherein the first member further comprises a female threaded section and the second member

further comprises a male threaded section, and further comprising a grip section disposed on the first member.

- [c30] The fastener of claim 23, wherein the second member is adapted to be in threaded engagement with the second blowout preventer, wherein the first member further comprises a female threaded section and the second member further comprises a male threaded section, and further comprising a grip section disposed on the first member.